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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/690,613	10/23/2003	Christopher Douglas Moffatt	HAR62 014	5924

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EXAMINER	
LUGO, DAVID B	

ART UNIT	PAPER NUMBER
2611	

MAIL DATE	DELIVERY MODE
10/04/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/690,613	MOFFATT ET AL.	
	Examiner	Art Unit	
	David B. Lugo	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 July 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 July 2007* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see pages 8-12, filed 7/11/07, with respect to the rejection(s) of claim(s) 1-13 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of newly found prior art reference.

Drawings

2. The drawings were received on 7/11/07. These drawings are acceptable.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 3-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oelcer U.S. Patent 7,254,180 in view of Feng et al. U.S. Patent Application Publication 2004/0146115.

Regarding claims 3 and 8, Oelcer discloses a method for transmitting data in a multi-carrier communication system comprising sequencing data according to a unique sequence and modulating the data in IDFT unit 11 according to a constellation (Fig. 4 – step 21; col. 7, lines 15-37), selecting a sequence by determining if a peak level exceeds a threshold (col. 7, lines 38-41), and repeating the process until the desired level is achieved (col. 8, lines 20-23). While Oelcer discloses that a peak level is compared with a threshold, one of ordinary skill in the art would recognize that the criteria of a PAPR threshold may be used as described in column 2, lines 38-39, as a matter of design consideration, as both will result in generating multitone signals with reduced PAR, which is the object of Oelcer (col. 1, lines 16-18).

Oelcer also states that the invention may be combined with other PAR reduction techniques (col. 3, lines 31-33), but does not disclose filtering the sequence to provide a filtered signal prior to transmission. Feng discloses a PAPR reduction approach where the amplitude levels of the transmitted signal exceeding a threshold is reduced, and the reduced signal is subsequently filtered (para. 10). It would have been obvious to one of ordinary skill in the art to combine the teaching of Feng with the method of Oelcer to provide further PAPR reduction.

Regarding claims 4 and 9, as disclosed by Feng, filtering includes comparing the amplitude levels to a threshold and reducing the amplitudes exceeding the threshold. Further, one of ordinary skill in the art would recognize that such a comparison may be made in the digital domain using samples as a matter of design consideration.

Regarding claims 5 and 10, the filtering operation of Feng would also result in the some attenuation of adjacent samples.

Regarding claim 6, Regarding claim 3, Oelcer discloses a method of preventing limiting of an amplifier comprising sequencing data to be transmitted based upon a resultant PAPR of the modulated sequence by modulating the data in IDFT unit 11 according to a constellation (Fig. 4 – step 21; col. 7, lines 15-37), selecting a sequence by determining if a peak level exceeds a threshold (col. 7, lines 38-41), and repeating the process until the desired level is achieved (col. 8, lines 20-23). While Oelcer discloses that a peak level is compared with a threshold, one of ordinary skill in the art would recognize that the criteria of a PAPR threshold may be used as described in column 2, lines 38-39, as a matter of design consideration, as both will result in generating multitone signals with reduced PAR, which is the object of Oelcer (col. 1, lines 16-18).

Oelcer also states that the invention may be combined with other PAR reduction techniques (col. 3, lines 31-33), but does not disclose filtering the sequence to provide a filtered signal prior to transmission. Feng discloses a PAPR reduction approach where the amplitude levels of the transmitted signal exceeding a threshold is reduced, and the reduced signal is subsequently filtered (para. 10). It would have been obvious to one of ordinary skill in the art to combine the teaching of Feng with the method of Oelcer to provide further PAPR reduction. Further, one of ordinary skill in the art would recognize that such a comparison may be made in the digital domain using samples as a matter of design consideration.

Regarding claim 7, the filtering operation of Feng would also result in the some attenuation of adjacent samples.

5. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oelcer in view of Corral U.S. Patent Application Publication 2004/0086054 (previously cited) and Feng et al.

Regarding claim 1, Oelcer discloses a method for transmitting data in a multi-carrier communication system comprising sequencing data according to a unique sequence and modulating the data in IDFT unit 11 according to a constellation (Fig. 4 – step 21; col. 7, lines 15-37), selecting a sequence by determining if a peak level exceeds a threshold (col. 7, lines 38-41), and repeating the process until the desired level is achieved (col. 8, lines 20-23). While Oelcer discloses that a peak level is compared with a threshold, one of ordinary skill in the art would recognize that the criteria of a PAPR threshold may be used as described in column 2, lines 38-39, as a matter of design consideration, as both will result in generating multitone signals with reduced PAR, which is the object of Oelcer (col. 1, lines 16-18).

Oelcer does not disclose that a data map signal is appended to the associated data vector to prior to transmission of the selected data vector. Corral teaches, if said power ratio does not exceed said predetermined threshold, appending to the modulated signal a data map signal associated with the data vector for which said power ratio does not exceed said predetermined threshold to thereby create an appended signal (para. 31). It is essential that a data map signal associated with the data vector be transmitted along with the modulated signal. This conveys to the receiver which sequence was selected by the transmitter for transmission, and thus, enables the receiver to recover the transmitted data (see Corral, para. 31). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to append the modulated signal of Oelcer with a data map to convey the appropriate information to the receiver.

Oelcer also states that the invention may be combined with other PAR reduction techniques (col. 3, lines 31-33), but does not disclose filtering the sequence to provide a filtered signal prior to transmission. Feng discloses a PAPR reduction approach where the amplitude levels of the transmitted signal exceeding a threshold is reduced, and the reduced signal is subsequently filtered (para. 10). It would have been obvious to one of ordinary skill in the art to combine the teaching of Feng with the method of Oelcer to provide further PAPR reduction.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David B. Lugo whose telephone number is 571-272-3043. The examiner can normally be reached on M-F; 9:30-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shuwang Liu can be reached on 571-272-3066. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

David B. Lugo
Primary Examiner

9/30/07